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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,453	09/28/2004	Jeroen Arnoldus Leonardus Johannes Raaymakers	NL 020233	2235
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PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER GUPTA, PARUL H	
			ART UNIT	PAPER NUMBER
			2656	

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/509,453

Applicant(s)

RAAYMAKERS, JEROEN
ARNOLDUS LEONARDUS J

Examiner

Parul Gupta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-13 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-13 are pending for examination as interpreted by the examiner. The IDS filed on 3/22/05 was considered.

Drawings

2. The drawings are objected to because the blank boxes in figures 1 and 2 should be labeled with functions. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The disclosure is objected to because of the following informalities: misspelling of the word initialization on line 30 of page 3 and again on line 5 of page 8, space after the S in line 5 of page 8, and lack of headings in the specification.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.

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(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required.

5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. The examiner respectfully requests that the Applicant carefully review the specification to determine and correct any other informalities that may be found therein.

Claim Objections

6. Claims 1, 3, and 4 are objected to because of the following informalities: Regarding claim 1, in line 5, it appears that the "radial tilt" should be –a radial tilt value– to establish antecedent bases for "radial tilt value" in line 6. Regarding claim 3, in line 2, "PID" should be written in whole words. Regarding claim 4, in lines 3-4, "said focus controlling output" appears to be –said controlling outputs– as recited in claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 6-7 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6, line 3, "said tilt control output" does not have an antecedent basis. It appears to be –said radial tilt value-. In lines 3-4, the limitation "said control means (10) is arranged to generate said tilt control output based on measured mean focus controller outputs and corresponding radial steps between two measurements" appears in contradiction to the limitation "said control means (10) is arranged to determine the radial tilt value based on a differentiation of focus control values obtained at different radii of said optical disk (1)" as recited in claim 1.

Regarding claim 7, line 1 recites the limitation "said tilt register value". There is insufficient antecedent basis for this limitation in the claim. It appears the applicant means to recite "said disc tilt value". Line 3 recites the limitation "two mean focus integrator values" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 13, lines 4-5, in the limitation "said focus controlling step comprises measuring said focus controlling output at at least two different radial positions, and generating said tilt controlling output based on the mean radial tilt obtained for said two predetermined tilt angles in between said at least two different radial positions", the limitation that said focus controlling step comprises generating said tilt controlling output is confusing because claim 10 recites generating a tilt controlling output in a step other than the step of controlling focusing state. Lines 4-5 recites the

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limitation "the mean radial tilt" and "said two predetermined tilt angles". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Hajjar et al., US Patent 5,627,808.

Regarding claim 10, Hajjar et al. teaches a tilt control method for controlling a radial tilt of a recording surface of an optical disc with respect to an optical recording/reproducing beam, said tilt control method comprising the steps of: a) generating a focus and a tilt controlling output (column 5, lines 23-28), and b) controlling a focusing state of the optical recording/reproducing beam and the radial tilt based on said focus (FES) and tilt (TES) controlling output (column 5, lines 23-62), characterized by c) determining the radial tilt value based on a differentiation of focus control values obtained at different radii of said optical disk (column 2, lines 26-33 and column 3, lines 45-50).

Regarding claim 11, Hajjar et al. teaches a method according to claim 10, characterized by controlling said focusing state by using a split coil arrangement arranged to provide a focus adjustment; and supplying said focus and tilt controlling output to respective coils of said split coil arrangement (elements 14 and 20 of figure 6 and explained in column 5, lines 51-63). Although the reference uses two separate coils to provide focus and tilt control, the two coils serve the same purpose as the applicant of providing focus and tilt control.

Regarding claim 12, Hajjar et al. teaches a method according to claim 10, characterized in that said focus controlling step comprises using a mean focus controlling output for tilt control (column 2, lines 25-33). The idea of finding the mean based on various measurements from different radial positions is given in column 1, lines 43-61. The given section refers to taking measurements at different radial positions to find calibration radii. Then, a signal representative of the focus based on the radius is determined. The concept of finding a representative based on the radial position serves the same purpose as the applicant.

Regarding claim 13, Hajjar et al. teaches a method according to claim 10, characterized in that said focus controlling step comprises measuring said focus controlling output at at least two different radial positions (column 1, lines 43-61), and generating said tilt controlling output based on the mean radial tilt obtained for said two predetermined tilt angles in between said at least two different radial positions (column 2, lines 26-33 and column 3, lines 45-50). Although the given section refers more to the radial positions than to the tilt angles in between, generating a representative signal as described in line 26-27 of column 2 shows how the angles in between the positions is also accounted for.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-2, 4, 6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hajjar et al. in view of Park et al., US Patent 6,714,496.

Regarding claim 1, Hajjar et al. teaches a tilt control device for controlling a radial tilt of a recording surface of an optical disc with respect to an optical recording/reproducing beam, said tilt control device comprising: a) control means (element 12, 10, 16, and 18 in figure 6) for generating a focus controlling output (done by the "compensation circuit" of element 12 in figure 6 and explained in column 5, lines 23-50); and b) actuating means (column 2, lines 34-46 and column 3, lines 18-36) for controlling a focusing state of the optical recording/reproducing beam based on said focus controlling output and the radial tilt, characterized in that c) said control means (element 12, 10, 16, and 18 in figure 6) is arranged to determine the radial tilt value based on a differentiation of focus control values ("focus height signals") obtained at different radii of said optical disk (done in element 18 and explained in column 3, lines 45-55).

Hajjar et al. does not teach a control means that generates the two focus controlling outputs.

Park et al. teaches the two separate focus error output signals (FET1 and FET2 of figures 4A and 4B) in an optical pickup (see abstract) that are to be used in tilt control.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of multiple focus error output signals as taught by Park et al. into the system of Hajjar et al. This would have improved reproduction by allowing

more accurate irradiation of the recording surface by the optical beams (column 2, lines 5-8; Park et al.).

Regarding claim 2, Hajjar et al. teaches a device, characterized in that said actuating means (element 9 of figure 6) comprises a split focus coil arrangement arranged to provide focus ("focus control actuator coil" of element 14 of figure 6) and tilt ("tracking control coil" of element 20 of figure 6) adjustment; and said control means is arranged to supply said focus controlling outputs to respective coils (done by the "compensation circuit" of element 12 in figure 6 and explained in column 5, lines 23-50) of said split coil arrangement. Although the reference uses two separate coils to provide focus and tilt control instead of a split focus coil, the two coils serve the same purpose as the split focus coil as both are directed to adjusting focus and tilt. In the device of Hajjar et al. in view of Park et al. as described above, the two separate focus error output signals in an optical pickup is given.

Regarding claim 4, Hajjar et al. teaches a device characterized in that said control means ("control actuator") is arranged to position a sledge (optical head of element 9 in figure 6 is designed to move to control tracking to serve the same function as the sledge) at at least two different radial positions, to control said actuating means to adjust the focus, and to measure said focus controlling output at said at least two different radial positions (column 3, lines 45-50).

Regarding claim 6, Hajjar et al. teaches a device, characterized in that said control means is arranged to generate said tilt control output based on measured mean

focus controller outputs (see explanation for claim 12) and corresponding radial steps between two measurements (column 3, line 45 -column 4, line 4).

Regarding claim 8, Hajjar et al. teaches a device, further comprising a tilt table ("LUT" of column 4, lines 5-21) for storing an information indicating mean disc tilt values and corresponding radial positions in figures 3, 4, and 5.

Regarding claim 9, Hajjar et al. teaches an optical disc player comprising a tilt control device (column 1, lines 21-42). The given section describes the motivation for the invention and intended use, which specifically mentions an optical disc player. Thus, it is inherent that the device is meant for an optical disc player so Hajjar et al. has taught the player comprising the device.

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hajjar et al. in view of Park et al. as applied to claim 1 above, and further in view of Watanabe, US Patent 6,845,068.

Hajjar et al. in view of Park et al. teaches all of the limitations of claim 1.

Hajjar et al. in view of Park et al. does not teach the limitations of claim 3.

Watanabe teaches a device, characterized in that said focus controlling output is a PID controller output (column 7, lines 10-25). The given section teaches how the focus is controlled and used in the PID operation, making the signal a PID output.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have the focus controlling output be a PID controller output as taught by Watanabe used in the system of Hajjar et al. Using a PID operation makes it easier to perform calculations on the signal (column 7, lines 20-25 of Watanabe).

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13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hajjar et al. in view of Park et al. as applied to claim 1 above, and further in view of Motosyuku et al., US Patent 5,602,566.

Hajjar et al. in view of Park et al. teaches all of the limitations of claim 1.

Hajjar et al. in view of Park et al. does not teach the limitations of claim 5.

Motosyuku et al. teaches a device according to claim 1, characterized in that said control means is arranged to set a mean disc tilt value in a tilt register (column 7, lines 32-50). The device taught records the tilt angle value of a processor into a register. This is similar to recording the tilt value of a disc as both inventions relate to fixing errors caused by tilt, although they are for two different devices.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the recording of the mean disc tilt value previously calculated into a tilt register as taught by Motosyuku et al. into the system of Hajjar et al. It is well known in the art that registers are reliable storage means for values that must be used in other calculations.

Allowable Subject Matter

14. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The claim is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a mean disc tilt value being obtained based on the equation of the claim that refers to $r_{\beta} = \frac{G_c c_i \Delta r_f}{c_f (a_1 + a_2) \Delta R}$.

The following is a list of the closest prior arts that were noted:

Hajjar et al. teaches the equation $Cb = (Vb - Vc)/(Rb - Rc)G1$ at the bottom of column 3. Although the equation is used for the same purpose of determining the tilt signal, Hajjar et al. uses a different method.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mitchell et al., US Patent 6,597,643, teaches a focus controlling output that is a PID controller in column 3, lines 29-43. Kahlman et al., US Patent 5,825,740 teaches the concept of setting a disc tilt value in a tilt register in column 15, lines 5-16.

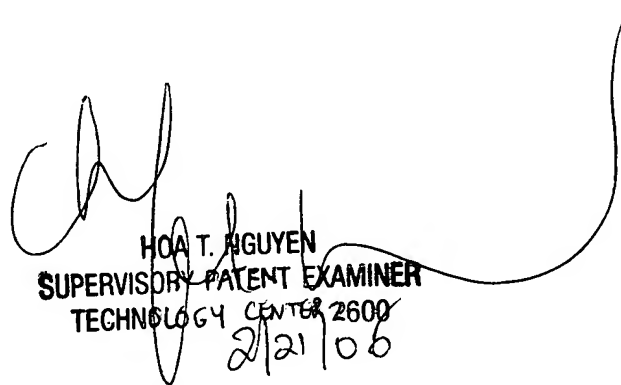
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260. The examiner can normally be reached on Monday through Thursday, from 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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2/21/06